Abstracts

Microwave Performances of n-p-n and p-n-p AIGaAs/GaAs Heterojunction Bipolar Transistors (Short Papers)

B. Bayraktaroglu, N. Camilleri and S.A. Lambert. "Microwave Performances of n-p-n and p-n-p AIGaAs/GaAs Heterojunction Bipolar Transistors (Short Papers)." 1988 Transactions on Microwave Theory and Techniques 36.12 (Dec. 1988 [T-MTT] (1988 Symposium Issue)): 1869-1873.

The performances of MOCVD-grown n-p-n and p-n-p AIGaAs/GaAs HBT's were compared at microwave frequencies to identify relative merits of each type of device. The f/sub t/ and f/sub max/ values of devices with 100-nm-thick bases were 22 and 40 GHz for n-p-n transistors and 19 and 25 GHz for p-n-p transistors, respectively. An accurate device model was developed using the measured S parameter data. The base resistance of the p-n-p transistors, as determined from the model, was about six times lower than identical size n-p-n devices. Output power and power-added-efficiencies of p-n-p devices were found to be half those obtained with n-p-n devices at 10 GHz.

❑ Return to main document.